Amendments to the Claims:

Please cancel claim 6 without prejudice or disclaimer of the subject matter contained therein.

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A plasma processing apparatus for processing a substrate with plasma by applying a high frequency to a reaction chamber so as to generate plasma therein, and applying a second high frequency to a substrate holder on which the substrate is placed so as to control the ion energy to the substrate; wherein

a surface portion of an inner side wall of the reaction chamber that is ~~directly~~ exposed to the plasma is substantially covered with a dielectric, ~~a~~ an electrically conductive portion is disposed ~~to~~ so as to be exposed to the plasma at a portion of the surface portion of the inner side wall of the reaction chamber which is at least partially covered with the dielectric and is electrically coupled to the inner side wall of the reaction chamber or earth so as to form ~~, and~~ a DC earth ~~is disposed to the conductive portion.~~, the electrically conductive portion has an area corresponding to less than 10% of the inner side wall area of the reaction chamber, a magnetic field generation means is disposed outside of the reaction chamber so as to apply a magnetic field to the plasma, and the DC earth is disposed at a position crossing a magnetic line of force that is closer to the substrate holder than a magnetic line of force that crosses either the inner side wall of the reaction chamber having the dielectric thereon or a surface of an earth member disposed on the inner side wall of the reaction chamber.

2. (currently amended) The plasma processing apparatus according to claim 1, wherein

the dielectric covers 90 % or more of a total surface area of the inner side wall of the reaction chamber that is ~~directly~~ exposed to plasma~~, and the conductive portion has an area corresponding to less than 10 % of the inner wall area of the reaction chamber~~.

3. (currently amended) The plasma processing apparatus according to claim 1, wherein

the electrically conductive portion has an area corresponding to 0.1 % to 10 % of the area of the inner side wall of the reaction chamber.

4. (currently amended) The plasma processing apparatus according to any one of claims 1 through 3, wherein

the DC earth is located at a position where a floating potential of plasma is substantially equal to or greater than ~~the~~ a floating potential of the plasma at either the inner side wall of the reaction chamber covered with the dielectric or ~~a~~ the surface of ~~an~~ the earth member disposed on the inner side wall of the reaction chamber, with respect to ~~said~~ the high frequency or ~~said~~ the second high frequency.

5. (currently amended) The plasma processing apparatus according to any one of claims 1 through ~~4~~ 3, wherein

the dielectric is a protective coating formed of insulating ceramic such as carbide, oxide or nitride, as exemplified by SiC, boron carbide and alumite, and a thickness d

of the dielectric coating is determined so that, with respect to the relationship between frequency f of the high frequency applied to the substrate and the dielectric constant ε of the dielectric, an impedance per unit area $R = d/(2\pi f\varepsilon)$ when ~~said~~ high frequency is propagated by ~~capacity~~ capacitive coupling through the dielectric ~~portion~~ is 100 Ω or smaller.

Claim 6 (canceled)

7. (currently amended) The plasma processing apparatus according to any one of claims 1 through ~~6~~ 3, wherein

either a base material of the DC earth or a protective coating disposed on a surface of the DC earth coming into contact with the plasma is composed of conductive ceramic, SiC, Al or Al compound.

8. (currently amended) The plasma processing apparatus according to any one of claims 1 through ~~6~~ 3, wherein

when a base material of the DC earth is composed of a non-metallic material such as conductive ceramic, SiC, Al or Al compound, a conductive member having a conductivity σ of 1 Ωcm or less is provided to ~~the mounting~~ a surface of the DC earth by evaporation, spraying or interposing, thereby reducing ~~the~~ an earth resistance of the DC earth.

9. (withdrawn) A plasma processing method for processing a substrate with plasma by applying a high frequency to a reaction chamber so as to generate

plasma therein, and applying a second high frequency to a substrate holder on which the substrate is placed so as to control the ion energy to the substrate; comprising

covering 90 % or more of a total surface area of an inner wall of the reaction chamber that is directly exposed to plasma with a dielectric, and disposing a DC earth comprising a conductive portion that is earthed and having an area less than 10 % of the inner wall of the reaction chamber; and

performing plasma processing to the substrate in the reaction chamber having said DC earth located at a position where a floating potential of plasma is higher than the floating potential of plasma at the inner wall of the reaction chamber that is closest to the substrate.

10. (new) The plasma processing apparatus according to claim 4, wherein

the dielectric is a protective coating formed of insulating ceramic such as carbide, oxide or nitride, as exemplified by SiC, boron carbide and alumite, and a thickness d of the dielectric coating is determined so that, with respect to the relationship between frequency f of the high frequency applied to the substrate and the dielectric constant ε of the dielectric, an impedance per unit area $R = d/(2\pi f\varepsilon)$ when high frequency is propagated by capacitive coupling through the dielectric is 100 Ω or smaller.

11. (new) The plasma processing apparatus according claim 4, wherein

either a base material of the DC earth or a protective coating disposed on a surface of the DC earth coming into contact with the plasma is composed of conductive ceramic, SiC, Al or Al compound.

12. (new) The plasma processing apparatus according to claim 4, wherein when a base material of the DC earth is composed of a non-metallic material such as conductive ceramic, SiC, Al or Al compound, a conductive member having a conductivity σ of 1 Ωcm or less is provided to a surface of the DC earth by evaporation, spraying or interposing, thereby reducing an earth resistance of the DC earth.